METHOD OF PREPARATION OF BITUMINOUS MIX SAMPLE FOR TEST SPECIMENS

SCOPE

This instruction describes the method of obtaining representative split samples for QMA projects and representative test specimens from a sample of bituminous mix.

A. Apparatus

1. Ventilated oven capable of maintaining a temperature at 135°C ± 3°C (275°F ± 5°F)
2. Masonry trowel
3. Balance. (Refer to the appropriate test procedure for the required capacity and accuracy.)
4. Pan, not less than 24 in. x 24 in. x 3 in. (600 mm x 600 mm x 75 mm) for 40 lb. ± (18 kilo) samples. Large samples, 80 lb. ± (36 kilo), will require the use of a pan size not less than 27 in. x 36 in. x 4 in. (675 mm x 900 mm x 100 mm).
5. Bituminous mix sampling scoop (scoop with vertical sides)

B. Procedure

1. Without removing the sample from the cardboard container, heat it in the oven at 135°C ± 3°C (275°F ± 5°F) until the mixture is soft enough to be easily worked with the trowel and capable of being thoroughly mixed. Then remove the sample from its container and place in the pan. Samples received in insulated boxes may be placed in the pan without heating providing the material is soft enough to be thoroughly mixed.
2. Using the trowel, mix, spread, and flatten the sample to a uniform thickness of approximately 1 1/2 in. (37.5 mm). Then carefully fold the edges of the sample toward the center and press flat with the trowel, so that large particles will not segregate to the edges. Fold and press one trowel load at a time. With a spatula, scrape the fine material off the trowel distributing it over the surface of the sample. Work around the sample in one direction, overlapping each trowel load until all edges have been folded and a truncated cone has been formed. Spread and re-flatten the sample to a uniform thickness as before and repeat the folding operation. Continue this process until the sample, when flattened to the uniform thickness of approximately 1 1/2 in. (37.5 mm), presents a homogeneous appearance.

   NOTE: The above technique will produce a truncated cone. Extreme care must be used to keep the sides of this cone as flat as possible and not allow particles to segregate to the edges.
3. To obtain material for the test specimen, start at the center of the sample and remove a strip with the sampling scoop. This strip should be taken from the center towards the outer edge of the pan and full depth of the sample. Make certain that all material is removed down to the bottom of the pan. (Refer to the appropriate test procedure to determine the amount of material taken, as described above, for the test specimen.)

C. Procedure for Quartering QMA Samples

1. Use the same procedure to create a truncated cone as described in section B1 and B2. After a truncated cone is obtained, use the trowel to cut through the truncated cone creating two halves with an equal amount of material. Make a second cut with the trowel, at right angles to the first; creating quarters with an equal amount of material. Combine opposite quarters creating two samples of equal amount.

2. When three equal sample portions are required, make three cuts through the truncated cone with the trowel forming six equal portions of material. Remove opposite portions of the sample creating three samples of equal amount.

3. After splitting clearly mark each sample container and include a properly completed Form #193 for shipment to the appropriate District Laboratory.

D. Alternate Procedures for Large Samples Contained in Two or More Boxes

1. The identical procedure is followed, except a large pan is used.

2. Each box of material making up the sample is regarded as a separate sample. The identical regular procedure is followed on each box of material through Step B2. Step B3 of the regular procedure is replaced with the following:

   The material contained in the first box is reduced to about half by removing strips of material with the sampling scoop. The strips are taken by removing the material all the way across and full depth of the sample. Make certain that all the material is removed down to the bottom of the pan. Place the strips of material in another container and continue removing strips of material in the above manner until the proper amount is obtained. Repeat the above procedure for each additional box of mix, adding the strips of material taken to the container holding the material obtained from the first box of mix. The mixture accumulated from the original boxes is now regarded as one sample, and the regular procedure is followed.